descriptive acquaintance with some of the essential phenomena. He can point to no line of research that seems to promise progress in the direction of mechanistic interpretation; yet holds to the mechanistic assumption, because he believes the resignation of it must bring all research to an end. At the end of the last edition of his great work he writes : ' The inescapable fact remains that the specific reactions of the developing egg depend upon its organization. Concerning the fundamental nature of this organization we are still ignorant; but we have nothing to gain by the vitalistic assumption that the guiding principle in development is not only unknown but unknowable. Existing mechanistic interpretations of vital phenomena, evidently, are inadequate; but it is equally clear that they are a " necessary fiction ". '[1]

Here Wilson reveals the belief, so common among men of science, that visibility (together with, I suppose, tangibility on the macroscopic scale) is the essential mark of the real; and holds the belief with the unquestioning conviction which dispenses with all formulation of it in words.

Some others who hold this same belief seek to formulate and justify it by saying that science can accept as real, can take into account, only factors that are spatially extended. This proposition has a more philosophical air, but is equally lacking in all justification. If recent develop-

[1] *The Cell,* 3rd ed., 1934. Wilson in the same book sets forth impartially every theory in the great debate between epigenesis and preformation, and shows how every attempt to discover in the egg even a trace of material

structure which might serve as the basis of differentiation and morphogenesis breaks down ; so that he himself is driven to the conclusion that such structure can exist only in the hyaloplasm of the cell—a very desperate last possibility, since the hyaloplasm, according to Wilson's own account of it, seems to be quite fluid.